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| 10/788,417 | 03/01/2004 | Yoko Kumagai | 64235-017 | 4957 |

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| EXAMINER |
|---|
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/788,417 | KUMAGAI ET AL. |
| | Examiner | Art Unit |
| | AMARE TABOR | 2139 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>10 December 2007</u>.

2a)☒ This action is **FINAL**.        2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>09/13/2007</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

1.     This correspondence is in response to Amendment and REMARKS filed on December 12, 2007.

2.     In response to the first non-final rejection made by the Examiner, Applicant amended the original Claims (1-7) by cancelling all the limitations and adding new Claims (8-14). Thus, Claims 1-7 are amended and Claims 8-14 are new.

3.     Claims 1-14 are pending.

### *Response to Arguments*

4.     Applicant's arguments with respect to the pending Claims have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Objections*

5.     Claims 8 and 14 objected to because of the following informalities:

The preamble of Claim 8 recites, "*A product comprising...*" Please clarify, or change it to "*A computer program product comprising...*"

In Claim 14, please clarify, or change the phrase "*validated-without*" to "*validated without*".

### *Claim Rejections - 35 USC § 102*

6.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujishiro et al. (US 2002/0046340 A1), referred as "*Fujishiro*" hereinafter.**

**As per Claim 1,** Fujishiro teaches,

A method for validating a public key certificate by a computer in a public key infrastructure composed of a plurality of certificate authorities including an end entity certificate issuing authority, wherein the end entity certificate issuing authority issues to an end entity a public key certificate used for validating a signature generated by an end entity apparatus operated by the end entity, the method comprises: a path registration step of registering in a database a valid path extending from a certificate authority being a start certificate authority to any end entity certificate issuing authority (see *REGISTER PATHS WHOSE VERIFICATIONS HAVE HELD GOOD, IN PATH DB S1004 in FIG.7*; and for example, par.[0021]),

a certificate validation step of receiving a certificate validation request for a public key certificate issued by any end entity certificate issuing authority, judging the validity of the public key certificate of which the certificate validation has been requested using information registered in the database, and outputting a result of the judgment (see *S2002 in FIG.*10; and for example, par.[0020]),

the path registration step and the certificate validation step are executed by the computer independently of one another (see *PATH DB 31 and PATH VERIFICATION UNIT 33 in FIG.5*),

the path registration step comprises the following steps executed by the computer: step 1) searching a path extending from the start certificate authority to the end entity certificate issuing authority which is the end of the path (see *S2002 in FIG.*10; and for example, par.[0063]);

step 2) validating the path searched in step 1(see *S2008 in FIG.*11; and for example, par.[0064], lines 1-3 and par.[0085]); and

step 3) registering the path which has been validated in step 2 as a valid path in the database (see *S1004 in Fig.*7; and for example, par.[0064], lines 3-5 and [0092]), and

the certificate validation step comprises the following steps executed by the computer: step 4) checking whether there is registered in the database a path specified by the request for certification validation, the path extending from the start certificate authority being the trust anchor of an originator of the request for certificate validation to the end entity certificate issuing authority which has issued the

public certificate of which the certificate validation has been requested, and which is the end of the path (see *VALIDITY TERM/REVOCATION STATE EXAMINATION UNIT 34 in FIG.5*; and for example, par.[0065]),

step 5) if the checked path is registered in the database as the valid path in step 4, validating a signature of the public key certificate of which the certificate validation is requested, by using the public key certificate issued to the end entity certificate issuing authority being the end of the checked path, and if validation of the signature is successful, judging that the public key certificate of which the certificate validation has been requested is valid (see *VALIDITY TERM/REVOCATION STATE EXAMINATION UNIT 34 in FIG.5*; and for example, par.[0065]) and outputting a result of the judgment (see *COMMUNICATION UNIT 36 in FIG.5*);

step 6) if the checked path is not registered in the database as the valid path in step 4, searching a path that includes a partial path from the start certificate authority being the trust anchor to the end entity certificate issuing authority which has issued the public key certificate of which certificate validation is requested and which is the end of the path, and that extends from the start certificate authority being the trust anchor to the end entity which is an issue destination of the public key certificate of which certificate validation is requested (see *VALIDITY AUTHENTICATION UNIT 35 in FIG.5;* and for example, par.[0067]);

step 7) in the searching step in step 6, if the path extending from the start certificate authority being the trust anchor to the end entity being the issue destination of the public key certificate of which certificate validation is requested is detected, validating the path that includes the partial path and extends from the start certificate authority being the trust anchor to the end entity being the issue destination of the public key certificate of which certificate validation is requested (see *VALIDITY AUTHENTICATION UNIT 35 in FIG.5;* and for example, par.[0067]);

step 8) judging the validity of the public key certificate of which certificate validation is requested based on the validation result in step 7 and outputting a result of the judgment (see *COMMUNICATION UNIT 36 in FIG.5 and Step 2008 in FIG.11;* and for example, par.[0109]); and

step 9) registering the partial path included in the path validated in step 7 into the database as a

valid path (see for example, par.[0079] to [0085]).


Claim 8 is a computer program product claim of the method recited in Claim 1. It is rejected for

the same rationale applied to the rejection of the method of Claim 1.


**As per Claim 2,** Fujishiro teaches,

Step 10) in which if the specified path is not detected in step 6 of the certificate validation step,

judging that the public key certificate of which certificate validation is requested is not valid, and outputting

the result of the judgment (see */S2003 in FIG.11;* and for example, par.[0103]).


Claim 9 is a computer program product claim of the method recited in Claim 2. It is rejected for

the same rationale applied to the rejection of the method of Claim 2.


**As per Claims 3 and 4,** Fujishiro teaches,

step 11) validating a revocation list issued by the end entity certificate issuing authority as to the

public key certificated issued by the end entity certificate issuing authority in step 2 by using the public

key certificate issued to the end entity certificate issuing authority (see for example, par.[0057] and

[0092]);

step 12) if the validation key certificate in step 11 is successful, registering the revocation list as a

valid revocation list in the database, in association with the valid path to be registered in step 3 (see

*CERTIFICATION HOLDING UNIT 25 in FIG.*4; for example, par.[0056] and [0092]);

step 13) as the public key certificate issued by the end entity certificate issuing authority which is

the end of the partial path in step 7, validating the revocation list issued by the end entity certificate

issuing authority by using the public key certificate issued to the end entity certificate issuing authority

(see for example, par.[0067], [0056];

step 14) if the validation in step 13 is successful, registering the revocation list as a valid

revocation list in the database in association with the partial path to be registered in the database in step

9 (see for example, par.[0079] to [0085]);

step 15) checking in step 5, whether the public key certificate of which the certificate validation is

requested is invalid or not, using the valid revocation list which has been registered in association with the

checked path (see *TERM/REVOCATION STATE EXAMINATION UNIT 38 and CRL CREATION*

*SCHEDULE TIME DB in FIG.*5; for example, par.[0057] and [0062] to [0066]); and

step 16) if the signature validation in step 5 is successful and the public key certificate of which

the validation is requested is valid in step 15, judging that the public key certificate of which certificate

validation is requested is valid, and if the signature validation is failed, or the public key certificate of

which the validation is requested is invalid, judging that the public key certificate of which certificate

validation is requested is not valid (see for example, par.[0057], [0065] and [0093] to [0098]).


Claims 10 and 11 are computer program product claims of the method recited in Claims 3 and 4.

They are rejected for the same rationale applied to the rejection of the method of Claims 3 and 4.


**As per Claims 5 and 6,** Fujishiro teaches,

step 17) if the path checked in step 4 of the certificate validation step is registered as the valid

path in the database, checking in step 5 whether the public key certificate of which the certificate

validation is requested or any other public key certificates issued by other certificate authorities included

in the checked path includes any constraint item [see for example, par. [0090]);

if the path includes any constraint item, checking whether the checked path observes the

constraint (see for example, par.[0055] and [0104]); and

if the path observes the constraint, judging that the public key certificate of which the certificate

validation is requested is valid (see for example, par.[0105] and [0106]);

step 18) if the path checked in the step 4 of the certificate validation step is registered in the

database as the valid path, checking in step 5, whether the certificate validation request includes any

policy and checking whether the public key certificate of which the certificate validation is requested or other public key certificates issued by any other certificate authorities included in the checked path satisfies the policy included in the certificate validation request (see for example, par.[0055] and [0107]); and

if the public key certificate of which the certificate validation is requested or other public key certificates satisfies the policy, judging that the public key certificate of which the certificate validation is requested is valid (see for example, par.[0108] and [0109]).

Claims 12 and 13 are computer program product claims of the method recited in Claims 5 and 6. They are rejected for the same rationale applied to the rejection of the method of Claims 5 and 6.

**As per Claim 7,** Fujishiro teaches,

in a case where, at the validity validation step, the path corresponding to the validity validation request is registered as the valid path in the database (see *VALIDITY TERM/REVOCATION STATE EXAMINATION UNIT 34 in FIG.5*; and for example, par.[0065]), it is validated without validating the certificate revocation list that the pertinent public key certificate is not revoked (see *S1008 VERIFY PATH ASSOCIATED WITH TERM_EXPIRED CERTIFICATE, BY USING NEW CERTIICATE in FIG.7;* and for example, par.[0093] to [0098]).

Claim 14 is a computer program product claim of the method recited in Claim 7. It is rejected for the same rationale applied to the rejection of the method of Claim 7.

## *Conclusion*

7.      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-892).

8.      Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.  Accordingly, **THIS ACTION IS MADE FINAL**.  See MPEP § 706.07(a).  Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action.  In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.  In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMARE TABOR whose telephone number is (571)270-3155.  The examiner can normally be reached on Mon-Fri 7:30a.m. to 5:00p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063.  The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.  Status information for published applications may be obtained from either Private PAIR or Public PAIR.  Status information for unpublished applications is available through Private PAIR only.  For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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